Alabama's HIE Landscape Assessment, Gap Analysis and Related Implementation Impacts

Addendum to Alabama's Strategic and Operational

Plan Submitted August 4, 2010

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Background

On August 4, 2010, under the State Health Information Exchange Cooperative Agreement Program, the Alabama Medicaid Agency, as the State Designated Entity submitted Alabama's Strategic and Operational Plan for Health Information Exchange (HIE) to the Office of the National Coordinator for Health Information Technology (ONC). Before states may use federal funding for implementation under the Cooperative Agreement, each state must receive approval for their State HIE Plan from ONC.

Alabama has been notified that the Plan did not adequately address program requirements outline in the Program Information Notice (PIN) ONC-HIE-PIN-001. Specifically, this PIN clarifies the State HIE Cooperative Agreement Program Funding Opportunity Announcement, EP-HIT-09-001, CFDA 93.719, with respect to required elements of the state strategic and operational plans. Additional guidance via teleconference was provided by Alabama's Deloitte Technical Assistance Contractor, Leisa Jenkins, and by Melissa Hargiss, Alabama's ONC Project Manager.

In response to ONC's initial comments regarding the required elements outlined in the PIN and subsequent teleconferences with our Project Manager and Technical Advisor, Alabama is submitting the following as an addendum to its Strategic and Operational Plan for HIE. As stated in the original plans, Alabama remains committed to building a set of statewide core services to facilitate efficient exchange of information and to identifying and deploying additional enterprise and value-added services that support provider ability to be meaningful users of health information technology (HIT.)

12/28/2010 Update

This update is in response to the additional information requested by ONC to fully explain and document Alabama's approach to staged implementation for the exchange of information. Alabama recognizes the need to ensure that every provider in the State has the ability to achieve meaningful use as quickly as feasible. It should be recognized that while the State will create the requisite infrastructure, including the technical and administrative functionality. Coordination with the Regional Extension Center (REC) will be critical in educating providers towards meaningful use. Alabama is committed to the vision set forth by ONC and as further explained during the All-Grantees meeting the week of December 13, 2010, including the focused discussion between ONC and State staff.

2/1/2011 Update

Based on the comments received, Alabama has updated this document to clarify that services will be based on Direct standards enabling messages to flow directly into provider's existing EHRs, provision of details regarding Phase Two, and how the State intends to address privacy and security through requiring the vendor to address certificate authority and authentication service. Further details were also provided on how the State intends to use the REC to ensure lab interoperability.

Overview of Statewide Health Information Exchange Architecture

The overarching goal of Alabama's HIE is the development and enablement of technology that will enable providers to exchange health information. To this end, Alabama will start at its simplest level, secure messaging. While Alabama providers may be able to exchange information with an aligned hospital; the State does not have local, regional or statewide health information capacity at present. It is recognized that providers will need a pathway and a process to exchange information with other qualified organizations, state and national agencies, and/or providers, interstate and intrastate health information organizations, and other information sources to be determined.

As described in the original Strategic and Operational Plan, the Alabama HIE is envisioned as the gateway for individual or group entities within the state to connect with other state HIEs and Medicaid agencies, federal agencies, the National Health Information Network (NHIN) and each other. To achieve that goal, Alabama will use a staged implementation that allows for each phase to be fully implemented and integrated with the prior phase, measured and evaluated. The purpose of a staged implementation will be to allow for a period of time of response and flexibility and most importantly, provider engagement and education. The initial phase will be the "on ramp" for meaningful use with secure messaging to enable the exchange of clinical information provider to provider. The "on ramp" will include the technical functionality of a secure web service for providers to log in or to interface with through their EHR. The interface with the provider's EHR will allow the provider to receive messages through DIRECT standards.

Through this web service, which will be based on NHIN Direct standards and protocols, each provider will have an account interfaced with a robust provider directory that enables secure, authenticated messaging. This service will allow providers to exchange basic health

information through direct messaging or email attachments. The provider directory will be populated with information from Medicaid, Blue Cross/Blue Shield (BCBS) and Licensure (licensure will serve as both as a source of information and as a checkpoint for provider validation). The provider directory will update per provider "hit" with the most current e-mail from the initiator who has logged in through his/her account.

The administrative functionality will include and support: 1) the establishment and management of the provider "account", 2) communication and coordination with the REC to educate providers on how to fully utilize the state's web service, and 3) assuring the Medicaid "meaningful use" providers the mechanism needed to receive the appropriate incentives. The web service will include administrative and technical validation of the eligibility of the provider to participate [authentication], validation of their status as a provider [data sources to include: Medicaid, BCBS, and licensure boards], and agreement to comply with the privacy and security rules of engagement. Acting as a HISP, secure messages will flow in and out to other HISPs without a DURSA as the State will require the vendor to be responsible for certificate authority (NIHN Direct) and provide the authentication service.

The state will look at the technical design with an eye on eventually having the capability to push information into a secure repository and then out to providers for integration into their EHRs. However, based on guidance provided, the state has prioritized the technical architecture so that the provider directory technology and secure messaging capability will be the initial core service components and will be given first priority in the implementation of the AHIE.

The state seeks to construct its exchange using enterprise service bus technologies and service oriented architecture (SOA) principles and components. The expected network design will mirror the NHIN standards and will be composed of gateways that communicate using a messaging platform and other market accepted health information exchange protocols as they become available. The AHIE will serve as the nexus of these gateways, capable of routing messages among all providers, and orchestrating messages according to business rules needed to deliver meaningful use functions.

By consolidating access, the state will be able to share and minimize operational costs, increase user acceptance and participation, and maximize benefits to all stakeholders. The goal of AHIE is to allow providers to access clinical data via their native EHR interface with a secure Web browser in order to meet meaningful use requirements.

At each stage of the development of the AHIE, the core principles will remain the same. One of the core principles of the AHIE is for it to serve as the "on ramp" to the NHIN standards with a focus on supporting Alabama Medicaid and Medicare EPs and EHs reach meaningful use requirements. AHIE will align with NHIN Direct standards and/or guidance that have gained industry acceptance. AHIE will also comply with all national standards as defined in the HITECH Act, and the final Standards and Certification Criteria established by ONC to support the Final Rule on Meaningful Use, including all specified content, vocabulary and privacy and security standards. AHIE will also utilize standardized code sets and nomenclature such as: ICD-9/ICD-10 for indicated conditions, SNOMED-CT for clinical terminology, CPT-4 for procedures and anatomic pathology, LOINC for clinical pathology results, RxNorm for medications, and CVX for immunizations.

Encryption will be a core privacy and security process and will utilize current standards. Other encryption will be layered on as and when needed (e.g. encryption of data at rest). As additional encryption standards are defined and specified by standards bodies, the Alabama will analyze, decide and make appropriate IT infrastructure updates to support new algorithms or security processes. These standards include any Federal Information Processing Standards (FIPS) that are announced by the National Institute of Standards and Technology (NIST). It will be necessary to evaluate the capabilities and risks associated with various encryption approaches including the ability of the private sector to implement the proposed algorithms. For example, the TLS protocol using the SHA-1 algorithm should be avoided and replaced with the SHA-2 family for digital signatures as described in NIST's Policy on Hash Functions. It is expected that encryption and security standards will continue to evolve and that an ongoing function of the HIE will be to stay abreast of evolving privacy and security risks, standards and approaches.

Transactions in the secure website will be recorded when electronic health information is routed (source, destination, message ID, date and time) created, modified, accessed, and deleted to include which actions were completed, by whom (ID or username), when (date and time), and from where (host address/name) for auditing purposes. For data integrity, The Secure Hash Algorithm (SHA-1), as specified by NIST, will be used to verify that electronic health information has not been altered in transit.

Section 1 – Electronic Prescribing

Electronic prescribing (e-Prescribing) is the use of healthcare technology to improve prescription accuracy, increase patient safety and reduce costs, as well as enable secure, bi-directional electronic connectivity between physician practices and pharmacies.

The Federal government's incentive program for the meaningful use of certified EHR technology includes a required or "core" measure for e-Prescribing. A certified EHR (or e-Prescribing module) must be able, at a minimum, to generate and transmit permissible prescriptions electronically. In order for an eligible provider (EP) to meet the e-Prescribing objective for meaningful use, more than 40% of all permissible prescriptions written by the EP must be transmitted electronically using certified EHR technology.

The first major activity in the e-Prescribing workflow is the prescribing of the medications; the clinician can use one of several different types of software to create and transmit the prescription.[i] Among these standalone systems specifically designed to help a physician's practice manage the patient's prescriptions, and fully integrated Computerized Provider Order Entry (CPOE) systems that are built around an EHR. The fully integrated EHR allows the prescriber to locate the patient being seen and to retrieve the patient's medication history, review past medical history – including labs, and other relevant clinical data, compare insurance coverage and formulary compliance, and check for potential drug interactions and patient intolerances for any new prescriptions written. The prescriber can then print the prescriptions and give them to the patient or fax them directly to the patient's pharmacy.

The second activity in the workflow is transmission of the completed prescription. If the prescriber chooses not to print or fax new prescriptions in favor of electronic submission to the patient's pharmacy, the e-Prescribing system will transmit the prescription via one or more network intermediaries. Intermediaries serve several purposes: 1) facilitate the secure transmittal of prescriptions to the appropriate pharmacy, 2) store and exchange prescription history with prescribers and pharmacies to facilitate decision support, and 3) provide connectivity among prescribers, pharmacies, and payers.

The third workflow activity of e-Prescribing is dispensing at the pharmacy. Most pharmacies have systems that support integration with network intermediaries. This allows their systems to automatically receive prescription data from any participating physician. The system then prompts the user to edit the received data entry requirements. Once the received information has been entered as a complete prescription, the pharmacy's software typically performs an independent series of decision support activities (checks for allergies, drug-drug or drug-disease

state interactions, formulary compliance, etc.) If the patient has third party insurance coverage, the prescription data is then submitted to the third party through a network intermediary, where many of the same checks are repeated by the third party vendor's software.

Current State and Gap Analysis

Physicians' Use of e-Prescribing Tools

Alabama used SureScripts data to determine the baseline of physician's utilizing e-Prescribing in Alabama. The percentages of Alabama providers routing prescriptions electronically at year-end were: 5% in 2007, 9% in 2008, and 18% in 2009.[ii]

Physicians' Routing of Prescriptions

According to data compiled by SureScripts, the percentages of prescriptions routed electronically in Alabama were 1% in 2007, 2% in 2008 and 7% in 2009.[iii] According to SureScripts, the total number of prescriptions routed electronically was 254,901 in 2007, 706,702 in 2008 and 2,217,719 in 2009.[iv]

Pharmacy Access

The Agency identified a list of all Medicaid-enrolled pharmacies in Alabama, including both chain and independent pharmacies. As of October 2010, this list identified 1,304 community pharmacies consisting of approximately 50% retail chain and 50% independent community pharmacies. These Medicaid pharmacies were then compared to the Surescript data to determine how many were activated for e-prescribing. It was determined that approximately 84% (1,099/1,304)[v] of pharmacies across Alabama with activated capabilities for accepting electronic prescribing and refill requests. SureScript's State Progress Report on Electronic Prescribing, indicated that Alabama had an overall blended rate of 86% for all (not just Medicaid) community pharmacies in 2009.[vi]

Alabama is a diverse state consisting of densely populated urban areas, such as Birmingham, Alabama, and large rural farming communities. Just under 32% of all Medicaid-enrolled pharmacies are located in the rural counties with 68% of the pharmacies located in the urban counties. When comparing e-Prescribing adoption for Medicaid-enrolled pharmacies in rural and urban counties, almost 14% of pharmacies in rural counties have not activated e-Prescribing, while 13% of pharmacies in urban counties have not activated e-Prescribing.

Gap Filling Strategies for E-Prescribing

Statewide HIE Services

Support for E-Prescribing is being solicited for the AHIE through a set of clinical core requirements. These requirements include: e-Prescribing, Clinical Information Exchange, Provider-Provider Messaging, and Structured Lab Results.

Alabama intends to leverage the role of Medicaid and the REC in e-prescribing. It is the intent of the state to consider opportunities to engage Medicaid providers to enhance the likelihood that the infrastructure will exist and connect to all Medicaid providers to comply with "meaningful use" requirements. The state intends to have conversations with pharmacies that are engaged with SureScripts but also intends to address the role of independent pharmacies is facilitating meaningful use.

Targeted Education/Outreach

Using the baseline data, it appears that there are two approaches: outreach and education of state pharmacies and the same to physicians. The AHIE has been working with the Alabama REC to identify specific actions within the REC's already established work plan with their priority providers to assure the provider's certified EHRs connect to and are interoperable with the pharmacies for purposes of e-prescribing. It is the AHIE's vision that any future functionality related to e-Prescribing will be supported through the AHIE where appropriate.

Pharmacies: Utilizing the cross-indexed list of Medicaid enrolled pharmacies; AHIE was able to further analyze the demographics of those not participating. Of the 201 Medicaid-enrolled pharmacies not participating[vii], 32% of them are located in rural counties as compared to 68% in urban counties. As previously stated there does not appear to be a direct correlation between rural or urban location related to choosing not to activate e-Prescribing as difference in the two percentages of non-activated pharmacies was less than 1%. AHIE also compared volume of claims in Fiscal Year 2010 to determine if any trends arose. We noted that the decision not to activate e-Prescribing was not based on claim volume alone. In an attempt to further understand the e-Prescribing landscape. Alabama conducted a telephone survey of the Medicaid-enrolled, non-activated pharmacies to determine reasons why a pharmacy may not chose to activate e-Prescribing. The top answers were:

1. The pharmacy likes the current system and does not see a benefit to changing.
2. The amount charged for transmission on SureScripts is "too high."

3. The pharmacy does not have the funds to upgrade their current system.

4. Low volume pharmacies did not see a financial incentive to spend additional money on an electronic system.

With a high baseline level of adoption, firmly entrenched reasons for the holdouts not adopting currently, and no financial incentive for a change in behavior, it would seem resources would be better spent on education and outreach to the physicians. However, outreach to all community providers – including pharmacies – is part of Alabama's communication plan as referenced in the AHIE S/O Plan. This will be collaborated through the Alabama REC who is responsible for outreach to physicians; the HIT staff will focus on strategies to improve activation of e-Prescribing by the 201 pharmacies currently identified as not participating.

Physicians: According to SureScripts, only 18% of physicians are e-Prescribing with only 7% of prescriptions eligible. Using the cross indexed list of pharmacies, AHIE will target areas of the states that have pharmacies capable of e-Prescribing and will work directly with those physicians to educate about the benefits of e-Prescribing. The advent of the Meaningful Use Incentive Payment Program will help support physicians in having the necessary technical system to generate an e-Prescription. Target criteria also will include those physicians with a high volume of Medicaid patients that typically generate prescriptions such as pediatricians but are not currently engaged in e-Prescribing.

Goals and Tracking Progress

Activity	Current State (December 2009)	Goal (July 2011)	Goal (July 2012)	Goal (July 2013)
Eligible Professionals use of e-Prescribing	18%	25%	50%	75%
Routing of Prescriptions	7%	20%	40%	75%
Pharmacy Access	86%	To Be Determined*	To Be Determined	To Be Determined

*more research is needed to determine why the 14% are not current participating

AHIE will track eligible provider use of e-Prescribing, the volume of e-Prescribing transactions, and pharmacy connectivity to e-Prescribing networks. As part of its state HIE evaluation plan, AHIE will annually report progress against these measures.

Section 2 – Structured Laboratory Results

With the passage of ARRA, efforts to improve the effectiveness, safety and efficiency of health care have been greatly accelerated. Among other things, ARRA provides the potential for exponential growth in the use of EHR systems. This will instigate demand for laboratories and their vendors to deliver lab result data directly into EHR systems rather than proprietary stand-alone solutions that are transmitted by differing modalities, including facsimile, e-mail and portals.

The Federal government's incentive program for the meaningful use of certified EHR technology includes an optional or "menu" measure for incorporation of structured lab results into EHRs. For an EP, eligible hospital, or critical access hospital to meet Stage 1 meaningful use requirements, more than 40% of all clinical lab tests results ordered for patients admitted to its inpatient or emergency department during the EHR reporting period whose results are either in a positive/negative or numerical format are incorporated in certified EHR technology as structured data.

The certification criteria for EHRs in incorporating clinical-lab test results are as follows:

- *Receive results:* Electronically receive clinical-lab test results in a structured format and display such results in human readable format.
- *Display test report information:* Electronically display all the information for a test report specified at 42 CFR 493.1291(c)(1) through (7). [CMS lab test report standards]
- *Incorporate results:* Electronically attribute, associate, or link a laboratory test result to a laboratory order or patient record.

Tracking the ability to receive structured laboratory results is a multi-step process which begins with the creation of an order for a laboratory test. The test results can be sent directly to the clinician's EHR system or another clinical data system in support of the provisioning of historical results and results for non-ordering providers of care. Providers of care may receive test results in the EHR system or another clinical data system or receive notification of the results (for later retrieval.)

Even when transferred electronically, physicians often deal with laboratory results from a variety of sources that are transmitted by differing modalities, including facsimile, e-mail, portal, and direct interfaces into EHRs. In addition, laboratory and care systems are rarely interoperable. While most laboratories use HL7 messages to send results, they use

idiosyncratic codes to identify tests.[viii] Therefore, clinicians' systems cannot fully understand the results they receive which requires them to either adopt the producer's laboratory codes (which is difficult if they receive results from multiple sources), or map each result from a producer's code system to their internal code system.

Current State and Gap Analysis

Ascertaining the state of structured lab results activities currently taking place in Alabama requires an understanding of the:

- Percent of labs able to produce and deliver structured labs;
- Percent of labs able to receive orders electronically;
- Percent of lab results currently being delivered electronically; and
- Percent of providers receiving structured lab results.

Alabama began the landscape assessment by identifying each laboratory operating in the state, using data collected from the Clinical Laboratory Information Act (CLIA) website and state data. Although there are over 3,700 labs in the state, Alabama Medicaid claims data indicates there are 176 laboratories actively billing for Medicaid services.

Gap Filling Strategies for Structured Laboratory Results

Efforts to advance the exchange of structured lab results in Alabama will involve a range of policy, procurement and technical questions. A determination regarding which options to employ will be based on the results of the landscape assessment of laboratory capabilities in Alabama. This assessment will ascertain laboratories' modality of electronic transmission and their ability to transmit results in accordance with the ONC standards and implementation specifications of Certified EHR Technology.

Using the list of unique organizations based on license numbers, Alabama plans a survey of laboratories that seeks information on their current ability and plans to: 1) Produce and deliver structured lab results electronically, and 2) The data content and transmission standards deployed. From this baseline, Alabama also will determine the percentage of results electronically delivered. The survey process is expected to begin in December 2010 to send to labs by spring 2011 in order to assure the infrastructure is in place regarding labs that is required for providers to meet meaningful use.

AHIE fully plans to leverage any national work done by other states or communities of practice. Constraints to date have included limited resources and transitional timing issues with a new Governor. However, we have been able to secure resources to dedicate to identifying high volume providers (baseline) and begin the discussions with LabCorp and QUEST. The State will also be targeting more local, high volume providers and continue discussions with LabCorp and QUEST over the next month to define a resolution to meet the providers' needs.

As other states develop strategies, we will closely review how those strategies may work for Alabama to follow Best Practices as they develop. Alabama has an excellent working relationship with Florida as part of our SERCH activities and Florida has been able to secure interoperability with QUEST. In addition, to the State will review particularly the current lab strategies developed by North Carolina, Delaware and California to see if these plans would work for our providers.

Statewide HIE Services

Support for lab interoperability is being solicited for the AHIE through a set of clinical core requirements. These requirements include: e-Prescribing, Clinical Information Exchange, Provider-Provider Messaging, and Structured Lab Results.

Statute, Regulations and Policy

The state is considering the following options related to structured lab results:

- Development of a regulation requiring laboratories to provide laboratory results in compliance with national standards by a specific date;
- Include standards-based interface language requirements in Lab Services contracts with the Medicaid Agency;
- Assure State RFPs and contract renewals include requirements to comply with national standards; and
- Assess Alabama's laws and regulations to ensure alignment with current CLIA regulatory guidance.
- Leverage sister states in terms of contracting processes.
- Leveraging REC resources such as preferred vendor selection to require an existing lab exchange that can be used by all providers utilizing that system. This requirement will

include selecting vendors that use Direct protocols ensuring structure receipt of structured lab results.

Data Analysis

Further data analysis is needed to cross reference the list of CLIA approved labs and billing labs to determine why such a discrepancy in numbers. Issues to be considered include billing versus performing, volume in both numbers and dollars and current reporting capability.

Task	Timeframe
Data Analysis	January 2011
Identification of Targeted Providers	February 2011
Contracting/Terminology Standards	April 2011
Integrated into AHIE	July 2011

Section 3 – Patient Summary Record

The ability to create, transmit, receive and interpret patient care summaries can enhance a wide range of health services, including continuity of care, accurate diagnosis and treatment, and patient and care giver engagement.

The federal government's incentive program for the meaningful use of certified EHR technology includes but core and menu measures for patient care summaries:

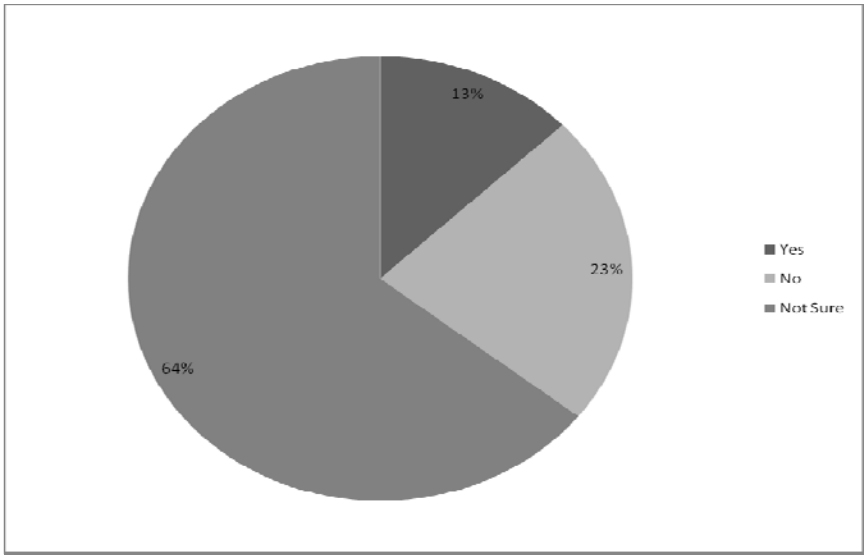
- As part of the core measure set for Stage 1 meaningful use requirements, EPs, eligible hospitals and CAHs must perform at least one test of certified EHR technology's capability to electronically exchange key clinical information (for example, problem list, medication list, medication allergies, diagnostic test results), among providers of care and patient authorized entities.
- As part of the Menu Set measures for Stage 1 of meaningful use requirements, the EP, eligible hospital or CAH who transitions their patient to another setting of care or provider of care must provide a summary of care record for more than 50% of transitions of care and referrals.

Current State and Gap Analysis

As part of the Strategic and Operational Plan process, an environmental scan was conducted to assess current capabilities. The results are contained in Appendix 5 of the submitted plan (237 providers responded.) In order to ascertain additional information for planning, a follow-up telephone survey was conducted on behalf of the Agency by Alabama State University. The survey was targeted to Medicaid-enrolled providers with a paid claim volume of 500 or greater. 1,001 responses were received.

Provider Type	Responses Received	% Currently Using EHR in Practice
General Practitioners	619	32%
Pediatricians	172	45%
Dentists	140	36%
Nurse Practitioners	70	38%
TOTAL	**1,001**	**35%**

Of those providers responding, almost 41% (409/1,001) indicated they have a Medicaid patient volume of 30% or higher. However, when surveyed whether or not the practice was planning to apply for Meaningful Use Incentive Payments, the blended responses were:



These responses indicate the need for provider education and communication, both in educating providers regarding the use of electronic records – which is an area that the Alabama REC will target, and communication with providers about the Incentive Payment program and determing which providers may be eligible for those payments. For additional information regarding the Communication Plan, please refer to the Strategic/Operational Plans, Section 1.4.6.

Gap Filling Strategies for Patient Summary Records

Statewide HIE Services

Support for patient summary records (clinical exchange) is being solicited for the AHIE through a set of clinical core requirements. These requirements include: e-Prescribing, Clinical Information Exchange, Provider-Provider Messaging, and Structured Lab Results. It is envisioned that the initial implementation of secure messaging will be the first step to information exchange.

Statute, Regulations and Policy

Alabama will continue to review statutory, regulatory and policy options to advance summary care records. A draft AHIE DURSA has been developed and is currently under review. The state is working with Alabama State University to develop operational policies and procedures for the AHIE. The Legal and Policy Workgroup continues to work through and develop policies related to security and privacy.

Data Analysis

A detailed analysis of the data received via the survey will be completed to develop an AHIE implementation and education/communication plan. Analysis will include location, provider type, system market penetration, and identified needs. It is anticipated that this information will also be shared with the Regional Extension Center to coordinate education efforts.

Goals and Tracking Progress

Activity	Current State (October 2010)	Goal (July 2011)	Goal (July 2012)	Goal (July 2013)
Number of hospitals currently using EHR technology that is EXCHANGING information	To Be Determined by March 2011	To Be Determined	To Be Determined	To Be Determined

Activity	Current State (October 2010)	Goal (July 2011)	Goal (July 2012)	Goal (July 2013)
Number of EPs using EHR technology that is EXCHANGING information	To Be Determined by March 2011	To Be Determined	To Be Determined	To Be Determined
Number of Hospitals using certified technology	To Be Determined by March 2011	To Be Determined	To Be Determined	To Be Determined
Number of EPs using certified technology	To Be Determined by March 2011	To Be Determined	To Be Determined	To Be Determined

AHIE will track provider adoption of EHRs and Qualified Organizations' capabilities to transport summary care records. As part of its state HIE evaluation plan, AHIE will report progress against these measures.

Section 4 – Provider Directory and Secure Messaging

The AHIE has re-prioritized the core technical functionality so that the provider directory and secure messaging mechanisms are in place prior to the end of Federal Fiscal Year 2011 (FFY 2011). Through the RFP process, the provider directory capability will include information from one or more sources that will have the ability to identify providers at both the individual and organization level. The directory will include specific levels of security, including authentication and access controls as earlier described.

The following table provides the technical infrastructure and core functions as updated to clarify the core functionality to assure providers in Alabama can be successful in meeting meaningful use:

AHIE Technical Functionality
Core HIE Services: Phase I **Provider Registry/Directory**: The proposed design calls for a centralized provider registry that will allow providers to register into an account, update, and interface with other providers through a secure web-interface. The provider directory capability will include information from one or more sources that will have the ability to identify provider (individuals or organizations), The directory will include specific levels of security, including authentication and access controls and necessary firewalls. The provider directory and secure web-based service will include both technical functionality and administrative functionality. The provider

AHIE Technical Functionality
directory creates a web service for providers to log in or to interface with through their EHR. Through this, NHIN standards and protocols based web service, providers will have an account interfaced with a robust provider directory that enables secure, authenticated messaging. This service will allow providers to exchange basic health information through direct messaging or email attachments. The provider directory will be populated with information from Medicaid, Blue Cross and Licensure (both as a source of information and as a checkpoint). The provider directory will update per provider "hit" with the most current e-mail from the initiator who has logged in through his/her account. The administrative functionality will include and support the establishment and management of the provider "account", communication and coordination with Regional Extension Center (REC) to educate providers on how to fully utilize the state's web service, and assuring the Medicaid "meaningful use" providers the mechanism needed to receive the appropriate incentives. The web service will include administrative and technical validation of the eligibility of the provider to participate [authentication], validation of their status as a provider [data sources to include: Medicaid, BCBS, and licensure boards], and agreement to comply with the privacy and security rules of engagement through an agreement that aligns with the national DURSA agreement. **Secure Messaging:** Using the other core functionalities including role based access and management, message and data validation, privacy and security (encryption and signed data user agreement-DURSA), monitoring and auditing, secure messaging will be provided. **System Administration**: Standard administration services such as user provisioning, security and access control, **Privacy**: The system should support the privacy of protected health information according to HIPAA, relevant state laws and applicable policies, including how system protects, enables and enforces patient privacy both the controls and any procedures to protect patient protected health information. **Security:** Support for the "Four A's": authentication, authorization, access, and audit. In addition, support for messaging, system, and network security protocols. System must support immutability of audit entries as it relates to access and disclosure of patient health information (PHI) and supports and/or provides two-factor authentication.

AHIE Technical Functionality
Logging: Levels and logging of transactions and transaction types including but not limited to NHIN / HHS standards, IHE auditable events and debugging or event tracing. **Monitoring**: Support for internal system monitoring, load balancing and network monitoring of services availability. Additionally, support for operational, business-driven, reliability, availability and serviceability monitoring. Any specialized rules or methods that detect unusual clinical, access, or other HIE functional events based on the clinical services. Examples include specialized rules the system utilizes to detect clinical gaps in care, drug seeking or shopping behavior, or other surveillance type functions based on the transactions traversing the network. **Reporting:** Support for operational, audit trail, and management reports, including but not limited to: access metrics, usage metrics, consent adherence, transactions, ad hoc reporting, Also parameters for supports for reporting generation and customization.
Core HIE Services: Phase II **Patient Registry:** The proposed design calls for a centralized patient registry. Functionally, this is often referred to as an MPI/RLS, enabling matching and location of patient information anywhere in the network. **Consent Registry**: Based on the access consent policy that Alabama utilizes, patient consent policies need to be linked and accessible in order to operate in an NHIN exchange model. These consent policies should provide a consistent source of a consumer's preferences, thereby enabling patient engagement and provider access to clinical information. The registry should be able to connect to existing consent registries and provide a consent registry if one is not available. **Web Services Registry (UDDI):** The registry contains endpoints for statewide Web services, stored in an NHIN compatible registry. The registry is able to point to other HIO registries or serve as the main lookup vehicle for any endpoints and nodes across the network. **Role Based Access and Management**: Required for security and authorization as described in the NHIN messaging platform and may require additional specificity to meet Alabama privacy and security policies. The intersection of user roles as defined by the user directory and trust models in the proposed solution should be provided. **Terminology Management (HITSP C83 / C80 Support):** This is required to enable uniform transport of the CCDs. As many existing interfaces are not compliant with the terminology

AHIE Technical Functionality
standards described in the existing HITSP specifications, solutions should clearly describe how to handle the challenge of semantic interoperability between systems. **Integration and Message Transformation**: Integrated Healthcare Enterprise (IHE) Profile Support (PIX) Manager, XDS Registry, XDS Repository, etc.): Support for the NHIN messaging platform which generally requires support for various IHE profiles, specifically the use of PIX/PDQ for patient identification and the use of XDS profiles for document indexing and retrieval; in addition, the use of cross community profiles including XC.
Core HIE Services: Phase III - TBD

Current State and Gap Analysis

In the absence of a Health Information Exchange in Alabama, there is no mechanism for secure messaging and there is no provider registry that will allow provider to identify and interface with each other for purposes of meaningful use.

In addition to the initial environmental scan, AHIE conducted a follow-up telephone survey (please refer to Appendix C: Survey Results) of Medicaid-enrolled providers which produced 1,001 responses. Of those providers responding to that survey, 35% (354/1,001[ix]) indicated current use of electronic health records and thus have the potential to take advantage of secure messaging with other providers through the AHIE, when operational.

Immediate action will be taken to secure a technical vendor to offer secure messaging.

Section 5 - Related Adjustments

Core Components

As illustrated in the updated chart of the original AHIE S/OP, secure messaging and provider registry/directory have been prioritized and identified as the initial core functionality provided through the AHIE . In addition, support for e-Prescribing, lab clinical document exchange and patient summary record will be included in the initial phase. The RFP will specifically identify and require these components as priority mechanisms for the state and the AHIE. The contract

will be award to an entity that agrees to comply with this approach, timeline and agrees to use national standards where they have been established for technical specifications.

In order to meet the timeline desired by the state to fully utilize both Medicaid and ONC funding efficiently and effectively, the current critical step is the procurement of a contractor to provide the web service for the provider directory. This will entail the design, development and implementation of the technical infrastructure with a staged implementation of secure messaging, with the technical capability to address at a future date lab clinical document exchange and patient summary record. The web service will be the state's HIST to provide secure routing.

Phase-In Time Line

It is the intent of the state to have an RFP issued in early 2011, requiring immediate approval of the AHIE S/O Plan. Included in the RFP is a phased-in approach with a timeline that assures the implementation and operation of the core functionality, including secure messaging, provider registry/directory, and support for e-Prescribing, lab clinical document exchange and patient summary record prior to the end of FFY 2011. Additional core functionality that support and enhance these two services also is included with a time line that will be dictated by the vendor's proposal and capability to assure compliance with all requirements for meaningful use.

This Strategic Plan represents a balance of State requirements with the requirements outlined by the Office of the National Coordinator in its "State Health Information Exchange Cooperative Agreement Program." Therefore, Alabama's Strategic Plan establishes a set of immediate actions that will be done in the next three months.

Phase Two of Alabama's plan includes building upon the core services of the provider directory and secure messaging to a more robust exchange. The initial core services will be augmented with Master Person indexing and a Record Locator Service. The vision is to create core services as explained and then have connectivity throughout the state with a series of gateway and nodes. The provider directory as a core service will be free and open to any and all providers.

AHIE Keys to Success

As indicated in the original AHIE S/OP, AHIE has identified illustrative "Keys to Success" as the state intends to work with and align with the ONC National Evaluator. However, in respect to the priority functionalities, the state has made the following metrics:

- **e-Prescribing**:

Activity	Current State (December 2009)	Goal (July 2011)	Goal (July 2012)	Goal (July 2013)
Eligible Professionals use of e-Prescribing	18%	25%	50%	75%
Routing of Prescriptions	7%	20%	40%	75%
Pharmacy Access	86%	To Be Determined	To Be Determined	To Be Determined

- **Structured Laboratory Results**: Upon completion of the proposed survey identified above and prior to the implementation of the functionality, the state will establish a baseline. The goals for each year thereafter will be an increase by 25% over the previous year.

- **Patient Summary Record**: Data from various surveys will be compiled that will provide a current state base line. The baseline will be established prior to the implementation of the functionality but not later than the end of the Federal Fiscal Year 2011. The goals for each year thereafter will be an increase by 25% over the previous year.

- **Provider Repository/ Directory and Secure Messaging**: Since there is no established mechanism today for providers to identify and communicate clinical information in a secure manner between them, the baseline for this component is zero. Once the capability exists, the goal is to get providers to use it. Consistent with the other components, the state will initially seek to increase by 25% each year the first two years. If the metrics is not met, the state will look at ways to increase participation or consider other alternatives by year two in order to prevent barriers to providers reaching meaningful use.

Risk Management Adjustments Related to Metrics for Success

Detailed strategies have been provided by stakeholder in Table 20 of the AHIE S/O Plan regarding risks and mitigation. In addition, Table 23 of the AHIE S/O Plan addresses risks, potential impact and risk management strategies. Many of the risks identified in the tables are relevant to each of the initial focus areas: e-Prescribing, provider registry/directory, secure

messaging, lab clinical document exchange and patient summary record In order to mitigate risks in these area as well as others, the state researched technical solutions through an RFI and ONC TA, amended the AHIE S/OP to focus on e-Prescribing, patient summary record, provider repository and structured lab results in order to enhance the potential for meeting provider meaningful use requirements, and will include in the RFP specific technical solution requirements and time line.

Another broad risk from the perspective of consumers and the public's trust that has implications for e-Prescribing, lab clinical document exchange, patient summary record, provider repository and structured lab results is that there will be privacy and security violations and privacy and security standards and policies and procedures will not be harmonization (Table 23 of the AHIE S/O Plan). As indicated in the Table, each AHIE participant shall implement a process to mitigate any harmful effect that is known about the use or disclosure of health information and the AHIE will harmonize privacy and security requirements and compliance across the state and its bordering states relative to access, audit, authentication, and authorization. Harmonization of privacy and security requirements will be addressed through convening meetings with bordering states and complying with federal requirements. There are multiple risks and mitigation strategies identified in the tables that have implications for more than e-Prescribing, lab clinical document exchange, patient summary record, provider repository and structured lab results but have relevance to these areas, such as compliance with ONC standards. (See Table 23 for the multiple risk and risk mitigation strategies.)

Changes to previously submitted AHIE S/O Plan

The following are addendum/responses to comments regarding the previously submitted AHIE S/O Plan:

- **Governance**: "One of the remaining activities is the drafting of the legislation to authorize and maintain the longer term AHIE Operating Commission, a public-private membership as a formal type of government governing board or potentially over time a 501(c)(3) non-profit organization**."** That activity has not been completed due to the evolving directions at the federal level and the transitions at the state level (a new Governor will take office in January 2011). A decision has been made to move back the legislative language completion data. The language for the required legislation will be submitted no later than the 2011 Legislative Regular Session.

- **Finance** : The ROI analysis has been completed by Alabama Blue Cross and Blue Shield as planned. A copy of the completed analysis is available on the Medicaid website: http://www.medicaid.alabama.gov/documents/Transformation-TFQ-Documents/HIE_Initiatives/HIE_Commission/HIE_Cost_Benefit_Analysis_10-8-10.pdf or is available in a Word document upon request.

- **Technical Architecture**: In response to question regarding the potential of additional gateways in the future, the language was updated to state "If other gateways exist in the future, they will connect to the AHIE. "

- **Technical Architecture** : The AHIE has re-prioritized items listed in Table 1 to ensure a Provider Registry and Secure Messaging will be the first steps towards a statewide HIE, thus ensuring we meet the Technical Assistance/guidance provided by Deloitte and Alabama's vision for its HIE.

- **Privacy and Security**: The AHIE has begun sourcing and analyzing legal information related to privacy and security, interoperability, Medicare and Medicaid, and the development of relevant policies and procedures. A law firm has produced the first draft of Alabama's DURSA, which is based on the NHIN DURSA to ensure the vision of an HIE that aligns with NHIN standards, and has completed a comparison of Alabama and Federal laws to determine the impact of HIE regulations on current law. As expected, most of Alabama law is silent to electronic health information exchange and legislation will be drafted as needed to address any changes necessary to current Alabama law. The AHIE also has contracted with an attorney to assist us in drafting provider agreements, privacy and security policies and procedures, liability concerns, the HIE procurement process, and other related legal matters as they arise.

- **Stakeholder Engagement/Consumer Representation**: Regarding other payer representation, Alabama represented mainly by two payers in the State – Alabama Medicaid and Blue Cross/Blue Shield of Alabama representing approximately 90% of all consumers. The Advisory Commission includes one member representing consumer advocacy. Additionally, the Communications Plan for the HIE includes key components to address consumer education.

- **Environmental Scan**: Updated information included in this Gap Analysis.

- **HIE Timelines**: Alabama has withdrawn its previously released RFP with a planned re-release date of early 2011. When this RFP is released, timelines will be updated regarding Bid due dates, etc.

- **River Region RHIO**: There are no current plans to award and/or implement the solution submitted by Vendors through an RFP due to lack of funding.

- **Governance**: Policies and Procedures for Governance are currently being developed with a first draft due in January 2011. As previously stated in this analysis, Legislation will be drafted and introduced during the 2011 Regular Legislative Session. The Advisory Commission is operating under a set of by-laws adopted in January 2009 until such time as Legislation can be introduced.

- **Sustainability**: Initial discussions have been held regarding sustainability options for the AHIE; however, based on guidance received Alabama will be re-addressing this issue in the first quarter 2011 after proposed solutions are received through the RFP process. Until the state knows "what" is being sustained and the cost, a sustainability model cannot be finalized.

- **Business Case for Participation**: Alabama State University is in the process of conducting this analysis with a January 2011 due date.

- For other items specific to the AHIE development and implementation, we cannot address comments on the AHIE S/O Plan as several items have changed based on guidance provided. As decisions are made, these comments will be addressed.

Appendix A: Non-Active e-Prescribing Independent Community Pharmacies as of October 2010

Name	Complete Street Address	City/State/ Zip
ALBERTVILLE DISCOUNT PHARMAC	422 NORTH BROAD STREET	ALBERTVILLE,AL 35950-9999
ASHVILLE DRUGS INC	120 6TH AVE MAIN STREE	ASHVILLE,AL 35953-
AUSTIN DRUG CO INC	2422-J DANVILLE ROAD SW	DECATUR,AL 35603-4221
AZALEA CITY MEDICAL SERVICES INC	1359 SPRINGHILL AVENUE	MOBILE,AL 36604-3210
B & K PHARMACY	6735 DEERFOOT PKWY #101	PINSON,AL 35126-3093
BARNES HEALTHCARE	221 NORTH COURT ST	FLORENCE,AL 35630-4735
BB PHARMACY	174 VIRGINIA AVE	DALEVILLE,AL 36322-2306
BEASLEY PHARMACY INC	111 E CHRUCH STREET	COLUMBIA,AL 36319-
BERRY PHARMACY	31 DEPOT STREET	BERRY,AL 35546-
BIG BEAR DISCOUNT DRUGS	204 W LEE STREET	TUSKEGEE,AL 36083-1720
BLOUNTSVILLE PHARMACY	104 MAIN ST	BLOUNTSVILLE,AL 35031-0250
BLUE AND GRAY DRUGS	804 MAIN STREET	HANCEVILLE,AL 35077-5461
BREWER MEDICAL SERVICES INC	2724 JACKSON HWY	SHEFFIELD,AL 35660-3431
BROWN DRUG CO INC	7171 ALABAMA HWY 22 NORTH	VALLEY GRANDE,AL 36701-9309
BRYARS-WARREN DRUG CO	112 NORTH MAIN STREET	ENTERPRISE,AL 36330-2537
BUBBA'S PHARMACEUTICAL CARE INC	207 NORTH 6TH STREET	OPELIKA,AL 36801-4229
BUNCH PHARMACY	1800 HENRY STREET	GUNTERSVILLE,AL 35976-1613
BURNS PHARMACY INC	541 JACKSON BLVD	TARRANT,AL 35217-3631
BUY WISE DISC PHARMACY	120 EAST BATTLE STREET	TALLADEGA,AL 35160-0122
BYNUM DRUG COMPANY	8749 ALABAMA HWY 202	EASTABOGA,AL 36260-5356
C&M VITAL CARE	5567 HWY 43	SATSUMA,AL 36572-2108
CARLISLE DRUG CO	12 MAIN S	ALEXANDER CITY,AL 35010-1904
CARTER'S FAMILY PHARMACY	43323 AL HWY 21	MUNFORD,AL 36268-6844
CENTER DRUG STORE	702 W MAPLE AVE	GENEVA,AL 36340-1632
CENTRAL CARE PHARMACY	203 WEST LEE STREET	TUSKEGEE,AL 36083-1719
CITIZENS DRUG STORE	1513 5TH AVENUE NORTH	BIRMINGHAM,AL 35203-1929
CLARKS DISCOUNT PHARMACY	P O BOX 625 - 1261 SOUTH MILITARY ST.	HAMILTON,AL 35570-0625
CLEBURNE DRUG CO	875 ROSS STREET	HEFLIN,AL 36264-1132
CLEVELAND PHARMACY	36321 STATE HWY 79 - STE 2	CLEVELAND,AL 35049-3556
COOKS PHARMACY	P O BOX 509	VERNON,AL 35592-0509
CORNERSTONE PHARMACY	9694 MADISON BLVD #A5	MADISON,AL 35758-9168
COWART DRUG CO INC	PO BOX 188	CALERA,AL 35040-9999
CULLMAN DISCOUNT PHARMACY	1407 2ND AVENUE SW	CULLMAN,AL 35055-5310
D & K PHARMACY	225 HAYNEVILLE PLAZA	HAYNEVILLE,AL 36040-0000

Name	Complete Street Address	City/State/ Zip
DEUEL DRUG STORE INC	2710 SPRINGHILL AVE	MOBILE,AL 36607-2918
DORA DISCOUNT PHARMACY	2165 HWY 78 #102	DORA,AL 35062-4466
DOWNEY DRUG ALEXANDRIA	6312 HIGHWAY 431-N	ALEXANDRIA,AL 36250-5005
DOWNEY DRUG ANNISTON LLC	2427 AL HWY 202	ANNISTON,AL 36201-5324
DRUGS FOR LESS #1186	714 ACADEMY DRIVE	BESSEMER,AL 35023-5200
DRUGS FOR LESS #1371	1683 CENTER POINT RD	CENTER POINT,AL 35215-5526
DRUGS FOR LESS #1781	234 GREEN SPRINGS HWY	HOMEWOOD,AL 35209-4906
DURA-MED SOUTHEAST INC	174 HWY 113	FLOMATON,AL 36441-4556
EAGLE PHARMACY INC	2200 RIVERCHASE CENTER - STE 675	HOOVER,AL 35244-2918
ELKMONT PHARMACY INC	25462 ALABAMA HWY 127	ELKMONT,AL 35620-6608
ERNIES PHARMACY INC	5135 C HWY 17	HELENA,AL 35080-3514
ESCAMBIA DRUG STORE INC	108 SO MAIN STREET	ATMORE,AL 36502-2446
EUFAULA DRUGS INC	146 E BROAD STREET	EUFAULA,AL 36027-2024
EUTAW DRUG COMPANY	202 PRAIRIE AVE	EUTAW,AL 35462-0390
F & K INC	1465 A S ALABAMA AVE	MONROEVILLE,AL 36460-3029
FIVE POINTS PHARMACY	1108 13TH ST	PHENIX CITY,AL 36867-4966
FOODLAND DISCOUNT PHARMACY	313 E SAND MOUNTAIN DR	ALBERTVILLE,AL 35950-2329
FORESTDALE PHARMACY	1548 FORESTDALE BLVD	BIRMINGHAM,AL 35214-3018
FOSTER DRUG CO INC	12 LAFAYETTE STREET	HAYNEVILLE,AL 36040-0366
FRANKLIN PHC PHARMACY	1303 DR MARTIN LUTHER KING	MOBILE,AL 36603-5341
FRANKS CARE PHARMACY	1207 STATE STREET	GREENSBORO,AL 36744-2012
GIBSON PHARMACY	1133 LOMB AVE	BIRMINGHAM,AL 35211-1246
GLENN'S PHARMACY	2413 CRAWFORD ROAD	PHENIX CITY,AL 36867-9999
GOODWATER PHARMACY	1249 SO MAIN STREET	GOODWATER,AL 35072-9040
GREEN VALLEY DRUG CO INC	1915 HOOVER COURT	HOOVER,AL 35226-3689
GREGERSON'S FOODS INC PHARMA	278 NORTH 3RD ST	GADSDEN,AL 35901-3201
GREG'S FAMILY PHARMACY	455 UNDERWOOD RD	RUSSELLVILLE,AL 35653-4111
GRIFFIN PHARMACY - MONTCLAIR	860 MONTCLAIR RD #463	BIRMIGHAM,AL 35213-1950
GRIFFIN PHARMACY - PRINCETON	817 PRINCETON AVE SW #107	BIRMIGHAM,AL 35211-1340
GRIFFIN PHARMACY SIPSEY	3844 SIPSEY RD	SIPSEY,AL 35584-0560
GROSS DRUG CO INC	6456 ALABAMA HWY 269	PARRISH,AL 35580-
GS LLC VALLEY HEAD DRU	114 COMMERCE AVENUE	VALLEY HEAD,AL 35989-4259
GULF SHORES PHARMACY	251 CLUBHOUSE DRIVE	GULF SHORES,AL 36542-3415
H & W DRUG EAST	315 15TH ST EAST	TUSCALOOSA,AL 35401-3663
HADDER PHARMACY INC	10303 MAIN STREET	OAKMAN,AL 35579-9999
HARALSON DRUGS CO INC	1941 PATTERSON STREET	GUNTERSVILLE,AL 35976-2060
HARRISON DRUG	25372 HIGHWAY 195	DOUBLE SPRINGS,AL 35553-

Name	Complete Street Address	City/State/ Zip
HAYES DRUG	P O BOX 100	JEMISON,AL 35085-0100
HERREN HILL PHARMACY INC	24 HERREN HILL ROAD	TALLASSEE,AL 36078-1254
HOKES BLUFF DRUG SHOPPE	5702 US HWY 278	HOKES BLUFF,AL 35903-7204
HOMEWOOD PHARMACY, INC	940 OXMOOR RD	HOMEWOOD,AL 35209-5228
HUGHS PHARMACY	100 MEDICAL CNTR DR # 102	GADSDEN,AL 35903-1198
J & J DISCOUNT PHARMACY	6405 AVENUE K	LIPSCOMB,AL 35020-2540
J W STEWART NEIGHBORHOOD H C	1409 SPRINGFIELD AVE	GADSDEN,AL 35903-2819
JACKSON FAMILY PHARMACY	1201 COLLEGE DRIVE	JACKSON,AL 36545-2406
JACKSON'S ROCKY RIDGE PHARMACY	3346 MORGAN DR	VESTAVIA HILLS,AL 35216-3052
JIM MYERS CAPSTONE DRUG INC	1520 MCFARLAND BLVD NORTH	TUSCALOOSA,AL 35406-2284
JIM MYERS DRUG INC	3325 UNIVERSITY BLVD EAST	TUSCALOOSA,AL 35404-4339
JIM MYERS DRUG SOUTH	5980 OLD GREENSBORO RD #C	TUSCALOOSA,AL 35405-6226
JIM MYERS DRUG WEST	2731 MLK BLVD	TUSCALOOSA,AL 35401-
JIM MYERS TWERS PHARMACY	701 UNIV BLVD E M-04	TUSCALOOSA,AL 35401-7422
JOE GOLDEN DRUG INC	13534 HIWAY 96 EAST	MILLPORT,AL 35576-0408
J'S PHARMACY	760 MARTIN ST. SOUTH #A	PELL CITY,AL 35128-2141
KESSLERS PHARMACY	1152 E LAKE BLVD	TARRANT,AL 35217-2402
KILGORE EXPRESS PHARMACY #4	599 HWY 72 EAST	GURLEY,AL 35748-
KILLEN PHARMACY, INC DBA FOODLAND PHARMACY	1161 HIGHWAY 72	KILLEN,AL 35645-9101
KING DRUG CO INC	7 N BROAD STREET	SAMSON,AL 36477-1101
KLEIN DRUG SHOPPE INC	87490 US HWY 278	SNEAD,AL 35952-
LADAS PHARMACY	1050 S BROAD ST	MOBILE,AL 36603-1038
LANGLEY PHARMACY	4330 HWY 78 E STE 109	JASPER,AL 35501-8955
LEMOX-CLOVERDALE DRUG	130 S 9TH ST	BESSEMER,AL 35020-6392
LINCARE, INC	4910 UNIVERSITY SQ STE 3	HUNTSVILLE,AL 35816-1881
LINCARE, INC	283 CAHABA VALLEY PKWY N	PELHAM,AL 35124-1165
LINCOLN PHARMACY INC	99 MAGNOLIA STREET SOUTH	LINCOLN,AL 35096-0200
LITTLE DRUG COMPANY LLC	310 S MAIN ST	LINDEN,AL 36748-1726
LLC HART APOTHECARY	1209 LAKE DRIVE SE - SUITE 101	BESSEMER,AL 35022-6488
LOWE'S PHARMACY	339 9TH AVE SW	LAFAYETTE,AL 36862-2803
MAJORS DISCOUNT DRUG	P O BOX 321	HALEYVILLE,AL 35565-0321
MARTINS PHARMACY	610 QUINTARD AVENUE	OXFORD,AL 36203-1840
MED SOUTH PHARMACY #48	206A OAK MT CIRCLE	PELHAM,AL 35124-1357
MEDICAL ARTS PHARMARCY	219 FORTNER STREET	DOTHAN,AL 36301-2405
MEDICAL CENTER PHARMACY	609 GANDY ST N E	RUSSELLVILLE,AL 35653-9999
MEDICAL VILLAGE PHARMACY	426 S CRAFT HWY	CHICKASAW,AL 36611-9999
MEDICAP PHARMACY #8316	618 MCMEANS AVE	BAY MINETTE,AL 36507-3333

Name	Complete Street Address	City/State/ Zip
MEDICINE SHOPPE	2701 E PATTON ROAD	HUNTSVILLE,AL 35805-4352
MEDICINE SHOPPE	607A 15TH STREET EAST	TUSCALOOSA,AL 35401-3235
MEDICINE SHOPPE # 0903	2801 LURLEEN WALLACE #3	NORTHPORT,AL 35476-3261
MEDTOWN INC	221 20TH STREET NORTH	BIRMINGHAM,AL 35203-3601
MID SOUTH	2200 RIVERCHASE CENTER - BLDG 700	BIRMINGHAM,AL 35244-2915
MIKES SOUTHSIDE PHARMACY	1023 SOUTH OATES ST	DOTHAN,AL 36301-3543
MILL STREET PHARMACY	10639 AL HIGHWAY 168	BOAZ,AL 35957-1955
MILLRY DRUGS	30282 HWY 17	MILLRY,AL 36558-9999
MODERN DRUGS OF BAYOU LABATR	13845 SOUTH WINTZELL AVE	BAYOU LABATRE,AL 36509-2495
MOODY DRUGS	2200 VILLAGE DRIVE	MOODY,AL 35504-3241
MOORE DRUGS INC	110 MAIN ST	HURTSBORO,AL 36860-0068
MOORES PHARMACY	2600 15TH STREET ROAD	HUEYTOWN,AL 35023-3606
MOORE'S PHARMACY LLC	2218 31ST STREET ENSLEY	BIRMINGHAM,AL 35208-3502
MOUNDVILLE MEDICAL PLAZA INC	HWY 69 SOUTH	MOUNDVILLE,AL 35474-0551
NATIONAL MEDICINE CENTER	608 MARTIN ST S	PELL CITY,AL 35128-2132
NEWMAN PHARMACY	423 BEL AIR BLVD	MOBILE,AL 36606-
NHC OF ANNISTON	2300 COLEMAN ROAD	ANNISTON,AL 36202-1530
NORTHCUTT DRUG CO	1774 WEST MAIN STREET	DOTHAN,AL 36301-1318
NORTHEAST PHARMACEUTICALS, INC	3456 HILLCREST ROAD - BLD B STE D	MOBILE,AL 36695-3196
NORTHPORT PHARMACY	909 MCFARLAND BOULEVARD	NORTHPORT,AL 35476-3373
OAK PARK PHARMACY	1365 GATEWOOD DR.	AUBURN,AL 36830-2834
OAK RIDGE HEALTH SYSTEMS INC	5650 B NEVIUS ROAD	MOBILE,AL 36619-1851
ODENVILLE DRUG INC	110 COUNCIL DRIVE	ODENVILLE,AL 35120-4495
OHATCHEE DISCOUNT DRUG	7814 AL HWY 77	OHATCHEE,AL 36271-9999
ORANGE BEACH FAMILY PHARMACY	25299 A CANAL RD STE 6	ORANGE BEACH,AL 36561-5801
PARKS PHARMACY INC	4505 A EXECUTIVE PARK DRIVE	MONTGOMERY,AL 36116-0001
PARTNERS IN CARE INC	206A OAK MOUNTAIN CENTER	PELHAM,AL 35124-1357
PATIENT REQUEST PHARMACY	27955 HWY 98 STE K	DAPHNE,AL 36526-4727
PATTERSON PHARMACY	241 PARKWAY DRIVE	LEEDS,AL 35094-0155
PAYLESS AT FREDS INC	29930 ARDMORE AVENUE	ARDMORE,AL 35739-7450
PEOPLE'S CHOICEPHARMACY INC	3259 ALABAMA HWY 157 STE E	CULLMAN,AL 35058-6001
PHARMACY CARE ASSOCIATES, LLC	545 COTTON GIN ROAD	MONTGOMERY,AL 36117-3552
PHARMACY EXPRESS INC	7583 WALL TRIANA HWY STE B	MADISON,AL 35757-8327
PHARMACY SERVICE PHARMACY	101A VILLA DRIVE	DAPHNE,AL 36526-4653
PHARMACY SOUTH INC	8258 HWY 31	CALERA,AL 35040-6908
PHIL CAMPBELL DRUGS	2936 HWY 237	PHIL CAMPBELL,AL 35581-0610
PINSON DISCOUNT DRUGS INC	6662 HWY 75 - STE 118	PINSON,AL 35126-0000
PISGAH FAMILY PHARMACY LLC	6112 CO RD 88	PISGAH,AL 35765-

Name	Complete Street Address	City/State/ Zip
PISGAH PHARMACY	PO BOX 9	PISGAH,AL 35765-0009
PONDERS MOUNTAIN PHARMACY	29812 ALABAMA HWY 71	BRYANT,AL 35958-5240
PROCARE PHARMACY LLC	1521 4TH AVE SOUTH-- SUITE 206	BIRMINGHAM,AL 35233-1612
PROFESSIONAL APOTHECARY	210 N ST WEST	TALLADEGA,AL 35160-2034
PUBLIX PHARMACY # 7598	800 HWY 20 WEST STE A	MADISON,AL 35758-
RITCHS PHARMACY	2714 CAHABA ROAD	BIRMINGHAM,AL 35223-2304
ROBERTA WATTS MED. CTR. PHARMACY	1020 TUSCALOOSA AVE	GADSDEN,AL 35901-3005
ROBERT'S DISCOUNT PHARMACY INC	758 SHADES MOUNTAIN PLAZA	HOOVER,AL 35226-1513
ROCK CREEK PHARMACY INC	6799 WARRIOR RIVER ROAD- SUITE 101	BESSEMER,AL 35023-8046
ROGERSVILLE DISCOUNT DRUGS	104 HIGHWAY 72 WEST	ROGERSVILLE,AL 35652-9999
RX ADVANTAGE INC	7101 HWY 90 STE 300	DAPHNE,AL 36526-9574
SAUNDERS MEDICAL INC	343 JAMES ST	OZARK,AL 36360-2014
SCARBOROUGH DRUG COMPANY	139 BROAD STREET	EUFAULA,AL 36027-9999
SCOTT PHARMACEUTIC AL S	2019 ALEXANDER DRIVE	DOTHAN,AL 36301-3037
SETON PHARMACY	2700 10TH AVENUE S	BIRMINGHAM,AL 35205-1200
SHOALS RELIEF SERVICES INC	103 SOUTH WATER STREET	TUSCUMBIA,AL 35674-2424
SKINNER DRUGS INC	2104 AL HIGHWAY 157	CULLMAN,AL 35055-0656
SMITHERMANS PHARMACY	703 MAIN STREET	MONTEVALLO,AL 35115-3714
SNEAD PHARMACY	87458 US HWY 278 EAST	SNEAD,AL 35952-1631
SOLOMON DRUG CO	308 MORROW AVENUE	EUTAW,AL 35462-1108
SOUTHEAST PHARMACEUTICALS IN C	702- A TROY HIGHWAY	ELBA,AL 36323-
SOUTHERN MEDICAL INC	2159 ROCKY RIDGE RD - STE 123	HOOVER,AL 35216-5191
SOUTHERN PHARMACETICAL SERVICES	200 OFFICE PARK DR STE 200	BIRMINGHAM,AL 35223-2455
SPEARS PHARMACYINC	121 JOHNSON AVE N	TALLADEGA,AL 35160-2486
ST CLAIR DRUG CO LLC DBA GERALDIN	41554 AL HWY 75	GERALDINE,AL 35974-3748
STEPHENS PHARMACY, INC	13521 SHELBY COUNTY 280- STE 245	BIRMINGHAM,AL 35242-0001
STEVES FORD'S PHARMACY	14479 COUNTY LINE RD	MUSCLE SHOALS,AL 35661-4433
STRICKLAND DRUG CO	31930 NW 1ST AVE	CARBON HILL,AL 35549-0430
SUMITON DISCOUNT DRUG	1595 MAIN ST	SUMITON,AL 35148-0236
SUMMERFORD DRUGS INC	4087 HIGHWAY 31 SW	FALKVILLE,AL 35622-9999
TARA PHARMACY SE LLC	211 SUMMIT PKWY STE 112	HOMEWOOD,AL 35209-4742
THAMES PHARMACY	121 E BRIDGE ST	WETUMPKA,AL 36092-2712
THE APOTHECARY AT MED CTR E	50 MEDICAL PARK DR E	BIRMINGHAM,AL 35235-9999
THE CORNER DRUG STORE INC	10107 CORNER SCHOOL RD	WARRIOR,AL 35180-3083
THE DRUG SHOP	104 W. MONTGOMERY	RUSSELLVILLE,AL 35630-2242
THE DRUG STORE	464 N DEAN RD	AUBURN,AL 36830-5148
THE DRUG STORE AT GRINERS LLC	14470 HWY 231-431 NORTH	HAZEL GREEN,AL 35750-8658
THE PHARMACY AT ALTADENA	4911 CAHABA RIVER ROAD - SUITE 105	BIRMINGHAM,AL 35243-2316

Name	Complete Street Address	City/State/ Zip
THE PHARMACY AT HAMPTON PLACE INC	6727 HWY 431 SO #M	OWENS CROSS RD,AL 35763-9226
THE PRESCRIPTION SHOP	409 N MONTGOMERY AVE	SHEFFIELD,AL 35660-2710
THE WOODLANDS PHARMACY RETAI	1824 MAIN AVE SW	CULLMAN,AL 35055-5253
TIM'S DISCOUNT DRUGS	2401 HELTON DRIVE	FLORENCE,AL 35630-1024
TRADING POST PHARMACY	103 SOUTH WATER STREET	TUSCUMBIA,AL 35674-2424
UAB HIGHLANDS APOTHECARY	1201 11TH AVE SOUTH	BIRMINGHAM,AL 35205-
UNI-CARE	842 PEACHTREE STREET	PRATTVILLE,AL 36066-5820
VALLEY DRUG NO 1	1302 SOMERVILLE RD SE	DECATUR,AL 35601-4337
VALLEY DRUG NO 2	1101 16TH AVE SE	DECATUR,AL 35601-3594
VICKERS DISCOUNT PHARMA	P O BOX 600	CARBON HILL,AL 35549-0600
VILLAGE PHARMACY	55 MAYFIELD ST	MONROEVILLE,AL 36460-3060
WARRIOR PHARMACY	219 MAIN ST	WARRIOR,AL 35180-1347
WATSON DRUG STORE LLC	121 N. CENTER AVE	PIEDMONT,AL 36272-2013
WESTLAKE PHARMACY INC	815 8TH STREET NORTH	BESSEMER,AL 35020-5303
WRIGHT DRUGS INC	101 W LAUREL AVE	FOLEY,AL 36535-1966
X-TRA DISCOUNT DRUGS -MGY	7200 COPPERFIELD DR	MONTGOMERY,AL 36117-7100
YORK DRUG LT	583 4TH AVE	YORK,AL 36925-2008
YORKS PHARMACY	3008 N 27TH ST	BIRMINGHAM,AL 35207-4550

Appendix B: Survey Questions

AHIE conducted a survey to determine a base level expectation for four groups of Medicaid enrolled providers: General Practitioners, Pediatricians, Dentists and Nurse Practitioners. Below are questions asked during the survey.

1. Do you currently use an electronic medical record in your office? (If No, Skip to #6 – If Yes, continue)

Yes ☐ No ☐ Not Sure ☐ No Answer ☐

2. What is the name of your system? (Some common ones are EHS, Docworks, NextGen, eClinical Works or McKesson). _____

3. Do you use your system for: Practice Management? (yes/no) ____

Clinical Records? (yes/no) ____

4. Do you share or exchange medical information from your electronic health record system with hospitals, other doctors, labs or other providers? (If No, Skip to #6, If Yes continue)

Yes ☐ No ☐ Not Sure ☐ No Answer ☐

5. Do you know how is this done? (Explain) _____

PROBE: Surveyor can probe for who they exchange info with, e.g. hospital has a system, we pay for an online system, etc.

6. Do you know about the federal incentive payments for "meaningful use" that have been offered to physicians in all states? (If No, Skip to #9, If Yes continue)

Yes ☐ No ☐ Not Sure ☐ No Answer ☐

7. Do you plan on applying for the meaningful use payment program through Medicaid or Medicare? If yes, which one? IF NO: (Skip TO #9)

Medicare ☐ Medicaid ☐ Don't Know/Not Sure ☐

8. Will you have to buy a new electronic medical or health record system or upgrade the one you have to receive federal incentive payments for meaningful use?

Buy New ☐ Upgrade Existing ☐ Not Sure ☐ No Answer ☐

9. What percentage of your practice's patient volume is Medicaid?

Less than 10% ☐ 10%-30% ☐ Greater than 30% ☐

IF NECESSARY: The volume is based on the number of Medicaid patient visits you have compared to the total number of patient visits each doctor has. (In general, to qualify for the federal meaningful use incentives through Medicaid, the individual doctor's patient volume must be 30% of total patient volume or 20% for pediatricians)

10. What is the best way for you/your physician(s) to learn about how Alabama will use electronic health records and how they can participate in the federal incentive program?

☐Information on Website

☐Live Workshops

☐Emails

☐Printed information in the mail

☐Telephone

☐Other _____

Appendix C: Survey Results

		General Practitioners	Pediatricians	Dentists	Nurse Practitioners	Total
		702	185	152	76	1,115
1	**Do you currently use an electronic medical record in your office? (If No, Skip to #6)**					
	Yes	198	77	50	29	354
	No	325	84	71	32	512
	Not Sure	91	10	18	9	128
	Not Interested	5	1	1	0	7
	N/A or DC	83	13	12	6	114
	TOTAL	702	185	152	76	1,115
2	**What is the name of your system? (Some common ones are EHS, Docworks, NextGen, eClinical Works or McKesson)**					
	EHS	16	5	4	4	29
	DocWorks	9	7	4	1	21
	NextGen	19	5	5	2	31
	eClinical	23	3	0	3	29
	McKesson	10	4	0	1	15
	Other	98	53	34	15	200
	Not Sure	23	0	3	3	29
	TOTAL	198	77	50	29	354
3	**Do you use your system for: Practice Management/Clinical Records**					
	Yes	144	67	39	25	275
	No	20	5	5	3	33
	Not Sure	34	5	6	1	46
	TOTAL	198	77	50	29	354
4	**Do you share or exchange medical information from your electronic health record system with hospitals, other doctors, labs or other providers? (If No, Skip to #6)**					
	Yes	38	11	7	3	59
	No	112	49	34	23	218
	Not Sure	48	17	9	3	77
	TOTAL	198	77	50	29	354
5	**Do you know how is this done?**					
	Network	12	7	0	1	20
	Fax	5	1	0	1	7
	Other	4	6	8	1	19
	Not Sure	177	63	42	26	308
	TOTAL	198	77	50	29	354
6	**Do you know about the federal incentive payments for "meaningful use" that have been offered to physicians in all states?**					
	Yes	152	50	15	19	236
	No	196	91	97	43	427
	Not Sure	266	30	27	8	331
	TOTAL	614	171	139	70	994
7	**Do you plan on applying for the meaningful use payment program through Medicaid or Medicare? If yes, which one? (If No, Skip to #9)**					
	Yes	70	31	11	16	128
	No	128	46	39	13	226

		General Practitioners	Pediatricians	Dentists	Nurse Practitioners	Total
		702	185	152	76	1,115
	Not Sure	416	94	89	41	640
	TOTAL	614	171	139	70	994
8	**Will you have to buy a new electronic medical or health record system or upgrade the one you have to receive federal incentive payments for meaningful use?**					
	Buy New	26	14	4	1	45
	Upgrade	43	17	17	6	83
	Not Sure	129	46	29	22	226
	TOTAL	198	77	50	29	354
9	**What percentage of your practice's patient volume is Medicaid?**					
	Less than 10%	64	5	3	13	85
	10-30%	220	38	62	32	352
	Greater than 30%	**233**	**105**	**46**	**25**	409
	Not Sure	97	23	28	0	148
	TOTAL	614	171	139	70	994
10	**What is the best way for you/your physician(s) to learn about how Alabama will use electronic health records and how they can participate in the federal incentive program?**					
	Web	66	33	14	23	136
	Live Workshops	114	52	33	11	210
	e-mail	113	36	29	17	195
	Printed Info	190	29	58	19	296
	Telephone	36	1	0	0	37
	Other	4	0	3	0	7
	Not Sure	91	20	2	0	113
	TOTAL	614	171	139	70	994
	Eligible	**1,147**	**209**	**169**	**77**	1,602
	Total Surveyed	**702**	**185**	**152**	**76**	1,115
	% of total	**61%**	**89%**	**90%**	**99%**	**70%**

Endnotes

[i] Deloitte. "The evolving e-prescribing landscape: Challenges, incentives, and the opportunities for industry stakeholders." March 2010.

[ii] SureScripts. "State Progress Report on Electronic Prescribing." Data as of December 2009. http://SureScripts.com/about-e-prescribing/progress-reports/state.aspx?state=al&x=22&y=11

[iii] SureScripts. "State Progress Report on Electronic Prescribing." Data as of December 2009. http://SureScripts.com/about-e-prescribing/progress-reports/state.aspx?state=al&x=22&y=11

[iv] SureScripts. "State Progress Report on Electronic Prescribing." Data as of December 2009. http://SureScripts.com/about-e-prescribing/progress-reports/state.aspx?state=al&x=22&y=11

[v] This comparison used a list of Medicaid-enrolled pharmacies (as of October 2011) and comparing it to the pharmacies listed as activated on SureScripts website as of October 2011.

[vi] SureScripts. "State Progress Report on Electronic Prescribing." Data as of December 2009. http://SureScripts.com/about-e-prescribing/progress-reports/state.aspx?state=al&x=22&y=11

[vii] Please refer to Appendix A for a list of Medicaid-enrolled pharmacies that have not activated e-Prescribing according to the SureScripts website.

[viii] Catherine J. Staes et al. "A Case for Manual Entry of Structured, Coded Laboratory Data from Multiple Sources into an Ambulatory Electronic Health Record." *Journal of the American Medical Informatics Association*. 2006; 13:12-15.

[ix] Refer to Appendix C, Survey Results, Question 1 – 354 "Yes" responses.